

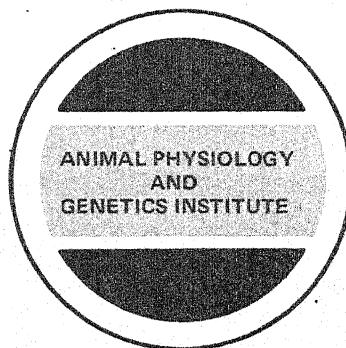
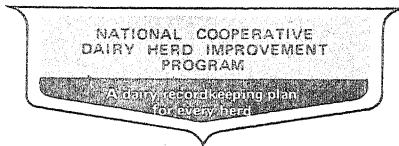
# Dairy Herd Improvement Letter

JANUARY - FEBRUARY - MARCH 1974

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Dairy Herd Improvement Letter  
January-February-March 1974

ENCOURAGING ENROLLMENT IN THE  
NATIONAL COOPERATIVE DAIRY HERD IMPROVEMENT PROGRAM <sup>1/</sup>

By Gerald J. King and Frank D. Murrill <sup>1/</sup>

Between 1940 and 1960, enrollment in the National Cooperative Dairy Herd Improvement Program increased from 2.91 percent of U.S. cows to 13.63 percent--0.54 percent per year. In the 13 years since 1960, enrollment has increased to 28.65 percent of U.S. cows, an average increase of 1.16 percent per year. This is double the rate of the past 20 years, but is not exceptional when compared with the percentage of tested cows in other countries.

Those involved in operation of the dairy recordkeeping plans have not engaged in publicity campaigns. They have preferred to emphasize education and research. This is proper, yet only 28.65 percent of our dairymen are on test. The National Cooperative Dairy Herd Improvement Program is publicized as an important tool for herd management, but 71.35 percent of our cows are not enrolled in any testing program. Why not? Dairymen have given many reasons for not enrolling. Some are:

"I can't afford it."

"I know what my cows produce."

"I don't need to spend the money on testing when I know which cows to cull."

"It's too expensive."

"There's no association close enough."

"I don't want anyone looking at my records!"

"I'm not selling purebred cattle, so I don't need to test."

"Nobody's ever talked to me about testing."

"I'm not going to cull from my small herd, so I'll wait until my herd gets bigger."

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Simply having records will not help the dairymen in his management decisions. The records must be used to decide:

- Whether a presently used ration is too expensive, or so poor in quality as to be uneconomical.
- Whether efficient use is being made of available forage.
- Whether any cows are being fed more than they can use economically.
- Whether any cows are being fed too little.
- Whether cows are being bred to maintain a desired calving interval.
- Whether bulls are being used in a way that will cause inbreeding to increase to an unacceptable level.
- Which cows should be culled.

When selling his heifers, one dairymen belatedly realized that he could have recovered three to five times the dairy recordkeeping cost in additional selling price, if he had had DHIA records on the heifers' dams.

Several approaches to encouraging enrollment are:

- To make it immediately worthwhile for a dairyman to be in a testing program. A dairyman joining at his own request might receive the first month's testing fee free.
- If a dairyman enrolls a herd not his own, he might receive credit for an amount equal to a month's testing fee for the herd enrolled.
- If a DHIA supervisor enrolls a new herd, he might receive a bonus equal to a month's fee for the herd.
- A supervisor might receive a bonus for having the greatest number of cows enrolled, the greatest number of herds enrolled, and the greatest percent increase in cows on test or in herds on test or both.
- The local DHIA with the greatest increase in cows on test might receive a bonus from the State DHIA.
- The local Extension Agent with the greatest percent increase in cows on test in his county might receive a bonus from the State DHIA.

Other ideas are being used. The important thing is for more dairymen to realize the importance of good production (and perhaps feed and cost) records in the management of their herds.

## IDENTIFICATION OF COWS ON OFFICIAL TEST

By Gerald J. King

Rule 4 of the Official DHI Rules requires positive identification of each dairy cow in DHI herds. The required identification is limited to the registration number or eartag of the cow herself. Nothing is said about the identification of the sire and dam of the cow. I have suggested to the Coordinating Group for the National Cooperative Dairy Herd Improvement Program that these items as well as the birthdate and breed of the cow be added to the required identification for Official DHI cows.

Why identify cows in your herd? Several reasons are:

For feeding according to production, for the completion of an individual breeding cycle, for following through on a long-range breeding program, opportunity to merchandise at higher prices, or for culling.

Nothing but the cow's number is needed for feeding for production or culling on production or for records on the completion of an individual breeding cycle. For the development of a herd, however, full identification is essential to avoid the addition of undesirable traits to your herd, and to avoid inbreeding. Full identification is also needed to cull on the transmitting ability of the individual's sire or dam or both or to cull on pedigree.

Milk production is controlled by a cow's inherited ability to produce and her environment--feeding and treatment. Thus a cow that doesn't have the inherited ability to produce large amounts of milk cannot produce as much as a cow that does, regardless of how well she is fed and treated. And a cow with inheritance for high milk production will not produce well if she is not treated well and fed to her potential. Full identification of a cow is essential to ensure the best possible mating of any given cow and a maximum increase in the genetic base in succeeding generations.

Some believe that full identification of dairy animals serves only to support the artificial insemination (AI) industry. The AI industry was originally conceived to get cows bred for dairymen more easily and more safely and to make genetically superior bulls available to dairymen at a reasonable cost. The best interest of dairymen is served by supporting the AI industry, so that AI may continue to provide the best quality bulls for dairymen. Only with full identification of animals will any bull be selected for an AI stud. Some of the AI studs have their own young sire-sampling programs or cooperator herds or both, but they still need

identification of dairy animals outside their cooperator herds. Thus, any effort to identify dairy animals benefits dairymen the most. Even though most AI studs have young sire-sampling programs, some bulls are purchased on the basis of production of daughters in one or a very few herds. Such a bull will never be selected without full identification of his daughters. And the difference in price between cutter-canner and proven breeding bull makes time spent in recording identification very valuable. The same is true of selecting cows for planned matings. If a cow is not fully identified, she will not be selected.

To write down 9 digits, representing a registration number or eartag, takes about 5 seconds. By allowing for searching across a barn sheet, recording the 5 numbers for full identification of a young dairy animal might take 30 seconds. Surely 30 seconds per cow per year is not too much time to spend to insure some or all the advantages of full identification of the dairy herd.

Another problem with lack of identification is that when either the sire or a sire's daughters are not identified, that sire can't be summarized.

In addition to the immediate value of full identification, herd owners on the Official DHI and DHIR testing plans agree to make their records available to the State Universities and Cooperative Extension Services and USDA for research and education.

No research on transmitting ability can be done with unidentified data. For such work, sires must be identified, with at least a minimum number of daughters' records to obtain meaningful results. It is the collection of data for the Nation, a State, or for any region that makes possible the ranking of sires and cows for genetic merit.

The USDA-LHIA Sire Summary List requires that any bull summarized have a minimum of 10 daughters with lactation records and herdmate records reported. Much less data makes a summary less meaningful as an indicator of genetic worth. In the 12 years since the daughter-herdmate comparison was adopted by USDA, acceptance of the system has been almost complete, and research workers continue to improve the method and research for better ones. Since the system regularly accepts data on bulls currently in use, full identification of dairy animals must continue. The continued evaluation of dairy sires is advantageous for all dairymen seriously interested in genetically improving their herds.

STATE AND NATIONAL LACTATION AVERAGES BY BREED  
FOR OFFICIAL DHI AND DHIR COWS THAT CALVED IN 1971 2/

Lactation averages for milk and fat yields (lb) and fat percentages by breed for cows that calved in 1971 are included for each of the 50 States and the United States. Lactation averages have been standardized to a 305-day

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2/ Prepared by Gerald J. King with technical assistance of Anna H. Kienast, Victor H. Lytton, and Lewis G. Waite.

lactation, twice-a-day milking, and mature equivalent (305-day, 2X, ME) basis.

Records included in averages.--Only Official DHI and DHIR records for which USDA editing was described in the December 1970 Dairy Herd Improvement Letter, ARS 44-222, were included in the averages. Cows were not included if the breed of sire and dam was different. Records of cows with unknown sires or dams were included in averages for the cow's breed. For instance, a cow reported as a Brown Swiss (breed 5) would not have been included if her dam were coded as another breed. However, if the cow's sire or dam has been reported as unknown (breed 0), the cow would have been included in the averages for Brown Swiss.

How records were standardized to a 305-day, 2X, ME basis.--Lactations where cows were denied an opportunity to give milk for 305 days were projected to 305 days with factors that account for differences in lactation curves because of breed, age, and traits (milk and fat). These factors are currently used by USDA and were published in the August 1965 Dairy Herd Improvement Letter, ARS 44-164.

All lactations were standardized to a mature equivalent basis by the age adjustment factors currently used by USDA. The factors account for variation associated with age to calving within breed, season, region, and traits (milk and fat). The factors used were published in the February 1967 Dairy Herd Improvement Letter, ARS 44-188.

Lactations made by milking three or four times a day were reduced to a 2X basis with factors published in ARS 52-1 and in the January-February 1972 Dairy Herd Improvement Letter, ARS 44-239.

Fat percentages were computed from the 305-day, 2X, ME milk and fat yields, which put them on the same basis.

The number of Official DHI and DHIR lactation records available for each breed for the United States and their respective standardized averages for milk and fat yields for cows that calved in 1971 are as follows:

Breed	Records No.	Milk	Fat	Fat
		Lb	%	Lb
Ayrshire	22,427	11,683	3.86	451
Guernsey	97,844	10,316	4.58	473
Holstein	1,592,817	14,737	3.60	530
Jersey	102,326	9,441	4.94	467
Brown Swiss	26,490	12,791	3.99	510
Milking Shorthorn	3,017	10,517	3.67	386

Tables of State averages and numbers of records by breed and year.--The number of Official DHI and DHIR lactation records available in each State and the respective 305-day, 2X, ME averages for lactation milk and fat yields and fat percentages are presented in two tables. Table 1 includes averages for Ayrshires, Guernseys, and Holsteins. Table 2 includes averages for Jerseys, Brown Swiss, and Milking Shorthorns.

TABLE 1.--AVERAGE YIELDS BY STATE FOR CALVING YEAR 1971 FOR OFFICIAL COWS CODED AS AYRSHIRE, GUERNSEY AND HOLSTEIN ON A 305-DAY, 2X, ME BASIS

STATE	AYRSHIRE				GUERNSEY				HOLSTEIN			
	RECORDS	MILK	FAT	FAT	RECORDS	MILK	FAT	FAT	RECORDS	MILK	FAT	FAT
	NO.	LB	%	LB	NO.	LB	%	LB	NO.	LB	%	LB
ALABAMA-----	131	10,187	3.69	376	1,049	8,796	4.49	395	21,316	13,098	3.64	476
ALASKA-----	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	66	14,898	3.61	538
ARIZONA-----	30	12,405	3.85	474	1,835	11,804	4.26	503	13,926	15,935	3.38	539
ARKANSAS-----	4	11,720	3.80	445	329	10,102	4.25	429	5,451	13,710	3.35	459
CALIFORNIA-----	446	14,690	3.92	576	6,441	11,326	4.54	514	137,152	17,065	3.57	610
COLORADO-----	83	10,889	3.96	432	413	10,758	4.61	496	13,273	15,153	3.52	534
CONNECTICUT-----	534	12,465	3.94	491	1,721	10,174	4.56	464	19,052	15,532	3.62	563
DELAWARE-----	176	11,346	4.05	459	176	8,831	4.59	407	3,588	14,516	3.65	530
FLORIDA-----	259	11,209	3.60	404	2,637	9,343	4.25	397	8,641	13,208	3.32	439
GEORGIA-----	194	10,799	3.73	403	1,412	10,358	4.50	467	25,470	13,511	3.51	474
HAWAII-----	1	12,900	3.54	457	3	7,627	3.82	291	2,708	13,400	3.13	420
IDAHO-----	103	10,807	3.72	402	1,051	9,888	4.52	447	19,851	14,423	3.56	514
ILLINOIS-----	562	11,267	3.83	432	2,878	9,945	4.60	458	41,986	14,498	3.67	533
INDIANA-----	222	11,511	3.86	444	4,416	10,708	4.70	503	30,633	14,305	3.63	520
IOWA-----	1,456	11,523	3.84	442	3,092	9,791	4.67	457	49,658	13,600	3.63	494
KANSAS-----	967	11,670	3.87	451	1,273	9,943	4.71	468	37,972	14,295	3.57	510
KENTUCKY-----	149	11,528	3.63	418	1,010	10,053	4.44	446	19,710	13,393	3.52	471
LOUISIANA-----	166	9,606	3.52	338	1,487	9,768	4.32	422	6,620	13,076	3.30	431
MAINE-----	299	11,891	3.95	470	650	10,284	4.54	467	16,732	14,854	3.66	544
MARYLAND-----	492	10,315	3.97	410	2,646	9,624	4.75	457	33,660	14,227	3.70	526
MASSACHUSETTS-----	831	11,977	3.88	465	1,089	10,635	4.63	493	16,374	14,918	3.67	547
MICHIGAN-----	105	11,523	3.89	449	2,601	10,950	4.75	521	67,962	14,618	3.63	531
MINNESOTA-----	834	10,000	3.84	384	4,819	9,796	4.63	454	115,211	14,196	3.61	512
MISSISSIPPI-----	666	10,243	3.59	368	1,856	9,955	4.35	434	12,871	12,672	3.44	436
MISSOURI-----	22	9,945	3.90	388	2,362	9,912	4.55	451	28,371	13,563	3.52	478
MONTANA-----	97	15,724	3.54	556	91	10,966	4.64	509	1,827	15,168	3.57	541
NEBRASKA-----	244	10,055	3.91	393	908	9,642	4.74	457	19,776	13,301	3.66	487
NEVADA-----	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	1,396	15,999	3.34	534
NEW HAMPSHIRE-----	731	12,616	3.87	488	362	9,879	4.42	437	8,594	15,028	3.63	546
NEW JERSEY-----	23	12,258	3.72	456	1,300	9,877	4.77	471	17,149	14,603	3.64	532
NEW MEXICO-----	26	13,626	3.66	495	1,932	11,798	4.37	515	5,667	16,189	3.38	547
NEW YORK-----	4,290	12,207	3.87	473	4,506	10,517	4.59	483	166,078	15,251	3.54	540
NORTH CAROLINA-----	239	12,446	3.75	467	1,961	10,078	4.57	460	48,172	14,761	3.52	520
NORTH DAKOTA-----	1	16,080	3.51	565	84	11,032	4.63	512	5,134	13,054	3.57	466
OHIO-----	1,257	11,860	3.84	456	4,660	10,581	4.67	495	60,365	14,755	3.65	538
OKLAHOMA-----	392	11,675	3.89	453	614	10,584	4.44	470	19,066	13,965	3.48	486
OREGON-----	239	12,250	3.83	470	2,099	10,703	4.64	497	18,162	15,195	3.68	559
PENNSYLVANIA-----	2,005	11,333	3.97	450	8,498	10,155	4.60	467	118,566	14,806	3.70	547
RHODE ISLAND-----	182	11,728	3.83	449	101	8,300	4.51	374	1,034	14,637	3.63	532
SOUTH CAROLINA-----	10	9,594	3.89	374	3,306	10,451	4.37	457	17,404	13,825	3.54	490
SOUTH DAKOTA-----	128	10,745	3.88	416	80	9,633	4.52	435	6,608	14,090	3.57	504
TENNESSEE-----	224	10,190	3.89	396	1,632	9,727	4.53	440	24,708	13,553	3.58	486
TEXAS-----	55	11,943	3.38	404	434	9,810	4.37	428	23,380	14,573	3.37	491
UTAH-----	29	10,757	3.84	412	128	9,865	4.30	425	16,973	14,544	3.52	513
VERMONT-----	1,764	11,956	3.88	464	590	10,436	4.60	481	31,341	14,877	3.60	536
VIRGINIA-----	527	11,676	3.85	450	3,728	9,909	4.64	460	54,289	13,986	3.59	502
WASHINGTON-----	375	12,401	3.84	476	3,458	11,180	4.63	517	41,197	15,854	3.60	570
WEST VIRGINIA-----	133	11,098	3.74	414	490	8,795	4.63	407	9,491	13,790	3.58	494
WISCONSIN-----	724	11,095	3.81	423	9,622	10,268	4.67	480	128,004	14,799	3.69	546
WYOMING-----	(1/)	(1/)	(1/)	(1/)	14	13,536	4.62	625	182	14,518	3.44	499
UNITED STATES-----	22,427	11,683	3.86	451	97,844	10,316	4.58	473	1,592,817	14,737	3.60	530

1/ LACTATION RECORDS NOT AVAILABLE.

TABLE 2.--AVERAGE YIELDS BY STATE FOR CALVING YEAR 1971 FOR OFFICIAL COWS CODED AS JERSEY, BRCWN SWISS, AND MILKING SHORTHORN ON A 305-DAY, 2X, ME BASIS

STATE	JERSEY					BROWN SWISS					MILKING SHORTHORN				
	RECORDS	MILK	FAT	FAT	RECORDS	MILK	FAT	FAT	RECORDS	MILK	FAT	FAT	(1/)	(1/)	(1/)
		NO.	LB	%		LB	%	LB		LB	%	LB			
ALABAMA-----	3,912	8,802	4.77	421	810	11,815	3.95	467	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)
ALASKA-----	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)
ARIZONA-----	670	10,636	4.57	486	495	16,023	4.03	645	33	10,605	3.51	372			
ARKANSAS-----	595	8,476	4.76	403	30	11,464	3.86	443	84	11,892	3.49	415			
CALIFORNIA-----	11,566	10,508	4.99	524	550	14,988	3.98	596	176	11,841	3.77	448			
COLORADO-----	539	9,482	4.92	466	456	13,749	4.06	558	29	11,780	3.64	424			
CONNECTICUT-----	436	9,932	4.96	492	315	14,006	3.99	559	5	10,736	3.80	406			
DELAWARE-----	78	7,690	4.81	369	25	11,154	3.68	413	(1/)	(1/)	(1/)	(1/)			
FLORIDA-----	1,822	8,867	4.57	405	641	12,991	3.67	477	2	10,950	3.76	412			
GEORGIA-----	2,319	8,862	5.05	448	640	12,955	3.84	497	9	11,589	3.65	424			
HAWAII-----	9	8,956	3.87	347	7	14,651	3.51	514	2	13,145	3.23	425			
IDAHO-----	1,647	9,235	5.10	471	116	13,045	3.93	512	58	11,806	3.71	438			
ILLINOIS-----	1,511	9,068	5.04	457	1,488	12,277	4.11	504	92	11,382	3.86	439			
INDIANA-----	1,406	8,686	5.02	436	925	13,191	3.97	524	81	11,557	3.63	420			
IOWA-----	2,466	8,572	5.06	434	2,815	12,280	4.00	491	448	10,043	3.70	372			
KANSAS-----	823	9,134	4.97	454	630	12,560	4.00	502	16	9,874	3.65	360			
KENTUCKY-----	2,255	9,114	4.86	443	445	11,923	3.82	455	(1/)	(1/)	(1/)	(1/)			
LOUISIANA-----	1,994	8,833	4.58	405	138	11,470	3.73	428	1	9,630	3.14	302			
MAINE-----	1,549	10,253	4.94	507	56	12,003	4.05	486	71	9,246	3.82	353			
MARYLAND-----	696	8,303	5.15	428	423	12,054	4.10	494	39	7,717	3.69	285			
MASSACHUSETTS-----	1,233	9,441	5.13	485	136	12,763	3.92	501	47	9,993	3.86	386			
MICHIGAN-----	2,275	8,975	5.18	465	444	12,168	4.01	488	35	11,694	3.55	416			
MINNESOTA-----	2,134	8,850	4.99	442	1,407	12,243	3.97	487	431	10,431	3.58	373			
MISSISSIPPI-----	4,419	8,710	4.74	413	61	10,014	3.91	393	(1/)	(1/)	(1/)	(1/)			
MISSOURI-----	2,202	8,655	4.93	427	566	11,912	3.89	464	162	10,601	3.63	385			
MONTANA-----	57	6,531	5.27	344	39	14,467	4.08	590	(1/)	(1/)	(1/)	(1/)			
NEBRASKA-----	209	8,665	5.00	433	657	11,646	4.08	476	128	9,462	3.73	353			
NEVADA-----	727	11,161	4.98	556	14	16,658	3.69	614	3	18,640	3.91	729			
NEW HAMPSHIRE-----	1,337	10,101	4.94	499	85	12,991	3.79	493	1	12,070	3.16	381			
NEW JERSEY-----	558	10,614	4.75	504	322	12,561	4.06	511	(1/)	(1/)	(1/)	(1/)			
NEW MEXICO-----	279	8,771	4.62	405	2	14,570	4.21	614	3	11,100	3.86	429			
NEW YORK-----	4,175	9,382	4.98	468	1,575	13,044	3.96	517	42	9,669	3.62	350			
NORTH CAROLINA-----	3,090	9,008	4.87	439	414	12,444	3.88	482	3	15,097	3.76	568			
NORTH DAKOTA-----	10	8,769	4.69	406	196	11,757	4.08	479	44	11,404	3.52	402			
OHIO-----	5,691	9,143	5.09	465	1,641	13,054	4.17	545	138	9,910	3.77	373			
OKLAHOMA-----	797	8,795	4.92	433	247	13,504	3.92	529	205	10,660	3.49	372			
OREGON-----	5,000	10,250	5.05	518	728	14,115	4.09	577	85	11,263	3.99	450			
PENNSYLVANIA-----	3,463	9,470	4.95	469	1,075	13,048	4.07	531	66	9,710	3.62	351			
RHODE ISLAND-----	47	10,090	5.40	546	1	15,480	3.64	563	(1/)	(1/)	(1/)	(1/)			
SOUTH CAROLINA-----	4,095	9,864	4.92	485	472	12,285	3.79	466	3	11,487	3.55	406			
SOUTH DAKOTA-----	148	8,101	5.08	411	377	12,020	3.92	471	31	9,152	3.63	332			
TENNESSEE-----	4,698	9,145	4.88	447	709	12,010	3.96	475	2	11,945	3.62	432			
TEXAS-----	4,382	9,139	4.65	425	610	14,366	3.71	533	3	9,803	4.44	436			
UTAH-----	1,468	9,006	4.91	442	70	14,048	3.89	546	7	12,286	3.69	454			
VERMONT-----	5,543	9,671	5.03	486	366	14,195	3.98	565	23	11,017	3.66	403			
VIRGINIA-----	1,363	9,474	5.05	479	487	11,663	4.05	472	4	10,840	3.91	423			
WASHINGTON-----	3,739	10,500	5.00	525	510	14,182	3.99	566	85	10,787	3.65	396			
WEST VIRGINIA-----	421	9,514	5.00	476	15	8,289	4.10	339	(1/)	(1/)	(1/)	(1/)			
WISCONSIN-----	2,473	9,128	5.04	460	2,259	12,707	4.01	510	320	10,244	3.65	374			
WYOMING-----	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)	(1/)			
UNITED STATES-----	102,326	9,441	4.94	467	26,490	12,791	3.99	510	3,017	10,517	3.67	386			

1/ LACTATION RECORDS NOT AVAILABLE.

